



PROGRAM MANUAL

**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

Introduction

The Federal Highway Administration (FHWA), as directed by the United States Code of Federal Regulations (CFR) Title 23, requires all state highway agencies to establish and utilize On-the-Job Training on federally-funded highway construction projects. The primary reasons supporting the Federal requirements are to:

- Train and upgrade minorities, women and disadvantaged persons to Journeyman level status in the highway construction industry;
- Establish a plentiful and well diverse pool of skilled workers for the highway construction industry; and
- Demonstrate that equal opportunity exists in the highway construction industry.

In the state of North Carolina, implementation and Administration of the On-the-Job Training (OJT) Program is the responsibility of the North Carolina Department of Transportation (NCDOT). The OJT Program works with the North Carolina (FHWA) Division Office to ensure guidance of policies, rules and regulations concerning the program's success.

The primary objective of this manual is to inform and educate highway construction contractors about North Carolina's OJT Program.

This OJT Manual is available in Spanish.

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Federal Guidance

The United States Code of Federal Regulations, Title 23, Part 230.107(b) reads as follows:

(b) *Federal-aid highway construction projects.* It is the policy of the FHWA to require full utilization of all available training and skill-improvement opportunities to assure the increased participation of minority groups and disadvantaged persons and women in all phases of the highway construction industry....

To accomplish and fulfill this policy, the FHWA has established a Training Special Provision. Historically, the NCDOT was responsible for determining which projects will include the Training Special Provision; however, it is generally applied to all federal-aid projects over \$10,000. The Federal Training Special Provision generally includes such wording as:

- ∞ Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women to the extent that such persons are available within a reasonable area of recruitment.
- ∞ This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.
- ∞ The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved.
- ∞ The contractor may allow trainees to be trained by a subcontractor provided that the contractor retains primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract. However, only the contractor will receive credit towards the annual goal for the trainee.
- ∞ Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.
- ∞ The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeyman in the various classifications within a reasonable area of recruitment.
- ∞ The contractor shall submit to the State for approval the number of trainees to be trained in each selected classification.

- ∞ No employee shall be employed as a trainee in any classification in which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman.
- ∞ It is the intention of these provisions that training be provided in the construction skilled crafts/operator rather than clerk-typists or secretarial-type positions.
- ∞ Training is permissible in lower-level management positions such as office engineers, estimators, etc., where the training is oriented toward construction applications.
- ∞ It is normally expected that a trainee will begin training on the project as soon as feasible after start of work utilizing the skill involved. The trainee will remain on the project as long as training opportunities exist in the work classification or until the training program is completed.
- ∞ The contractor shall explain the OJT program goals and objectives to the trainee and furnish a copy of the training classification outline to be followed.
- ∞ The contractor will provide for the maintenance of records and furnish monthly reports documenting company compliance under this Training Special Provision. This information shall be provided to the On-the-Job Training (OJT) Program Manager.
- ∞ Upon completion and graduation of the OJT program, the contractor shall provide each trainee with a company certificate showing the classification and length of training satisfactorily completed.
- ∞ If a trainee quits or is terminated prior to completing at least 50 percent of the program, the contractor will not be credited for that trainee. The contractor will need to replace the terminated trainee. The contractor will only receive credit for trainees that have completed a least 50 percent of the scheduled training program.

Program Administration in North Carolina

Alternate Program Defined

The North Carolina Department of Transportation administers a custom version of the Federal OJT Program, commonly referred to the Alternative OJT Program. As of 2007, contractors performing work in North Carolina no longer have a choice between the “Traditional” Federal Program and the “Alternate” NCDOT Program. All contractors (existing and newcomers) are automatically placed in the Alternate Program.

The flexibility of the Alternative OJT Program allows a contractor to train employees on all types of projects. These projects can be Federal, State, and/or privately funded. However, the projects must be located in North Carolina, and the training must meet the requirements outlined in this “On-the-Job Training Program” Manual. Also, priority must be given first to training trainees on NCDOT Federal-aid funded projects.

At the beginning of each year, all contractors will be contacted by the On-the-Job Training (OJT) Program Manager to determine the number of trainees for that calendar year. At that time, the contractors enter into an agreement with the department to provide a self-imposed on-the-job training program throughout the year. This agreement includes a specific number of annual training slots. The number of training slots can range from a minimum of one (1) to a maximum of 15 per contractor per calendar year. As such, the historically standard OJT Special Provision requirements typically associated with an individual project are no longer applied at the project level. Instead, these requirements are applicable on an annual basis for each contractor. In all cases, NCDOT’s mission is to adhere to the primary objectives behind the Federal initiative. (Special Training Provision Z-10. See attachment1)

If a contractor fails to attain their training assignments for the calendar year, they may be taken off NCDOT’s Bidders List.

Overall Management of the OJT Program

- ∞ **Development of Statewide Training Goals** – According to federal regulations, the overall statewide training goals are to be developed by the FHWA based on federal-aid apportioned amounts and minority populations. However, in actual practice, the FHWA requests that the states submit recommended calendar year goals for approval. North Carolina has developed a method for determining yearly goals, which generally results in one training goal per eight (8) million dollars of combined state and federally funded work.

- ∞ **Assignment of Training Goals to Contracts** – NCDOT no longer assigns individual training slots directly to individual highway construction contracts.
- ∞ **Assignment of Training Goals to Contractors** – NCDOT assigns goals for a calendar year based on recent past activity (three years) and anticipated upcoming year's activity with the NCDOT. The contractor signs an agreement to fulfill their goal for the year. A sample agreement letter is available at www.ncdot.gov/business/ocs/ojt/forms.html. Contractors receive credit for training their workforce on any type of project, regardless of the funding source, as long as the trainee remains in the same job classification as originally enrolled. Trainees may be transferred between projects if required by the contractor's workload scheduling.
- ∞ **Approved Training Classifications and Associated Requirements** – NCDOT has established common training classifications and their respective training requirements, which shall be used by department contractors. The classifications established by NCDOT are not all-inclusive. Contractors may submit new classifications for specific job functions their employees are performing. The department reviews and recommends for acceptance to FHWA the new classifications proposed by contractors. Contractors shall notify the NCDOT regarding any changes to their approved classifications. New classifications must meet the following requirements:
 - ∞ Proposed training programs are reasonable and realistic based on the job skill classification needs, and
 - ∞ The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.
- ∞ **Proficiency Standards** – NCDOT does not scrutinize individual worker proficiency as a measure for compliance with the OJT Program. The department and FHWA do advocate that the goal of the program is to generate effective highway construction trade workers and that it is in the contractor's interest to retain proficient workers.
- ∞ **Reimbursement for Training** – NCDOT no longer has a "trainee" pay item and does not reimburse contractors for providing training.

NCDOT & North Carolina Department of Labor

Approved OJT Program Standards - The North Carolina Department of Labor (NCDOL) is the State Approving Agency for veterans in apprenticeship programs and On-the-Job Training Programs. On April 1, 2002 the NCDOT OJT Program submitted and received approval from NCDOL Apprenticeship Training and Bureau for Approved Occupations of its On-The-Job Training Program. The NCDOL is the accrediting State Agency for OJT Program Standards. The OJT Program is registered under program number 24011. Training provided by contractors under the NCDOT's On-the-Job Training Program is approved by the NCDOL provided:

- ∞ The training curriculum contains a minimum of 1,000 hours training time, including some classroom time, and;
- ∞ The trainee has either a high school diploma or a GED;
- ∞ The trainee is at least 18 years of age;
- ∞ The trainee not be fully trained or qualified in the occupation for which they are being trained; and
- ∞ The trainee has a Social Security Number.

If these conditions are met, veterans may receive GI Bill benefits during their full time employment, provided they are not fully trained and are not receiving the fully trained wage rate.

More information regarding NCDOL can be located at www.nclabor.com/.

Wage Rates During the Training Period – Contractors are generally permitted to compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (**Davis-Bacon Act**). According to the FHWA, minimum pay shall be as follows:

- ∞ 60 percent of the journeyman wage for the first half of the training period;
- ∞ 75 percent of the journeyman wage for the third quarter of the training period; and
- ∞ 90 percent of the journeyman wage for the last quarter of the training period.

In no instance shall a trainee be paid less than the local minimum wage. In cases involving State Approved OJT Programs (and thus the NCDOL), there may be other factors affecting the minimum wage rates. It is the contractor's responsibility to adhere to whichever minimum rate will satisfy both the NCDOL and the NCDOT.

More information regarding the **Davis-Bacon Act**. can be located at www.dol.gov/esa/whd/programs/dbra/index.htm.

Administrative Responsibilities

Establishment of Training Strategy – Based upon the number of training slots specified in the annual agreement, the contractor shall establish a training strategy for the calendar year. This includes designating which job classifications, and on what schedule, the training will be provided throughout the year. This strategy shall be submitted to the NCDOT OJT Program Manager during the first few weeks of January. No approval will be necessary, but the OJT Program Manager will monitor this strategy throughout the year to determine progress and alert the contractor if any problems are foreseen. Periodic revisions to the strategy may be requested, either formally or informally.

Trainee Enrollment – The contractor shall use the most current version of NCDOT's OJT Trainee Enrollment Form, which is available at www.ncdot.gov/business/ocs/ojt/forms.html. A copy of the requirements for the job classification, in which the trainee will be enrolled, shall accompany the Trainee Enrollment Form. The completed form shall be submitted to the OJT Program Manager.

Trainee Monitoring – The contractor shall use the most current version of NCDOT's OJT Monthly Trainee Report, which is available at www.ncdot.gov/business/ocs/ojt/forms.html. The completed report shall be submitted to the OJT Program Manager by the 10th day of each month for the previous month until the trainee is no longer in the program. The completed Monthly Trainee Report form shall be submitted for all active OJT Program trainees, regardless of whether any hours were worked in the classification for which they are enrolled.

Trainee Completion – There are many ways for a trainee to exit the training program, including graduation, termination, layoff, personal reasons, etc. The contractor shall use the most current version of NCDOT's OJT Trainee Completion Form, which is available at www.ncdot.gov/business/ocs/ojt/forms.html. The completed Trainee Completion form and a copy of the Company Certificate shall be submitted to the OJT Program Manager no later than 15 working days after the trainee is no longer in the program.

Responsibility of the NCDOT Resident Engineer – The Resident Engineer no longer has any official responsibilities with regard to the OJT Program. Even so, the Resident Engineer should be generally aware of any training that is occurring and should inform the OJT Program Manager if any concerns or problems arise while trainees are working on their projects.

Responsibilities of the Contractor

- ∞ The contractor is to assign the trainee to a skilled craftsman, foreman, supervisors or mentor who will be responsible for the day-to-day training and mentoring of the trainee and who will share the appropriate skills associated with the classification for which the trainee is enrolled.
- ∞ The contractor shall count as credit only hours spent training within the classification for which the trainee is enrolled. If such classification is not necessary for a period of time or on a particular project, the contractor should attempt to continue to employ the trainee by assigning him/her other duties. No credit shall be taken for work performed while a trainee is assigned to other duties.
- ∞ The contractor shall count as credit only the trainees performing work in North Carolina.
- ∞ The contractor shall provide a program orientation to the training foreman, superintendent, and OJT trainee. This orientation shall include at a minimum, review of individual responsibilities during the training program and copies of the training syllabus for the job classification.
- ∞ The contractor shall instruct the trainee in safe and healthful work practices and shall ensure that the trainee is trained in facilities and other environments that are in compliance with all applicable safety and health laws and regulations of the United States and the State of North Carolina.

Responsibilities of the Trainees

- ∞ The trainee shall diligently perform work assigned by the employer.
- ∞ The trainee shall learn all duties as outlined in the classification enrolled.
- ∞ The trainee shall immediately notify his/her employer should something happen that would adversely affect the company or employment status.
- ∞ The trainee shall be aware of the on-going progress toward completing the OJT Program and notify a supervisor of circumstances for which the progress is halted or delayed. This may involve notifying someone above an immediate supervisor.
- ∞ The trainee shall be aware of their employer's rules and regulations and what steps to take should any issues arise while enrolled in the OJT Program.

OJT Program Support and Monitoring

Annual Report

The OJT Program Unit prepares an annual report for submittal to the FHWA. The report contains such information as accomplishments, enrollments, graduates, and demographics of trainees. The OJT annual report is available for viewing at:

www.ncdot.gov/business/ocs/ojt/forms.html

Trainee Interviews

In order to determine the continued effectiveness of the OJT Program in North Carolina, OJT program employees regularly conduct personal interviews with current trainees and recent graduates of the program. This enables the OJT program to modify and improve the program as necessary. Trainee interviews are generally conducted at the job site to ensure trainees are working and training is consistent with the approved training program.

Contractor Coordinator Interviews

The OJT Program Unit periodically conducts personal interviews with administrative personnel within the contractor's organizations. The information gathered is used to help determine whether current practices within the OJT Program are helpful and/or where possible improvements can be made. Contractors are on the "front-line" and typically are very helpful with comments and suggestions.

OJT Program Yearly Schedule of Events

Event	Annual Timeframe
Contractors sign agreement and provide trainee schedule for the year	Late January
NCDOT's OJT Program End-of Year Report to FHWA for previous calendar year	Early February
NCDOT's OJT Program conducts random interviews with the contractor's OJT coordinators	January to December
NCDOT's OJT Program conducts interviews with trainees and recent graduates	January to December
NCDOT's OJT Program submits OJT Program yearly goals and budget request for upcoming calendar year to FHWA for approval	Early December
NCDOT's OJT Program assigns yearly training goals to contractors for upcoming year	Late December

On-Line Documents, Forms, and Brochures

- **Sample: Annual Agreement Letter for Alternate OJT Program**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Special Training Provision Z-10**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Sample: Company Graduate Certificate**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Informational Brochure for Mentor/Coach and Trainees**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Informational Brochure for Trainees in Spanish**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)

OJT Forms

- **Copy of Trainee Enrollment Form**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Monthly Trainee Report Form**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Trainee Completion Form**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)

Interview Forms

- **Copy of Initial Interview Form**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Follow-Up Interview Form**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)
- **Copy of Graduate Interview Form**
(Check for updated version at www.ncdot.gov/business/ocs/ojt/forms.html)

CONTACT

**North Carolina Department of Transportation
On-The-Job Training Program**

1511 Mail Service Center
Raleigh, NC 27699-1511

Phone: (919) 508-1808

Fax: (919) 508-1814

Web site: www.ncdot.gov/business/ocs/ojt/forms.html

Location:

Raney Building
104 Fayetteville Street
Raleigh, NC 27699



ON-THE-JOB TRAINING PROGRAM

TRAINEE ENROLLMENT FORM

PLEASE PRINT OR TYPE

Contractor Name: _____

OJT Training Contact: _____ Telephone No. () _____

Trainee Name: _____

Last
First
Middle

 Training Classification: _____ No. Hours: _____ Start Date: _____
 (*attach copy of the classification*)
 Anticipated Graduation Date: _____

Month Day Year

Month Day Year

 Trainee Address: _____

Street/PO
City
State
Zip Code

 Telephone No: () _____ Birth: _____ Date of _____

Month Day Year

Month Day Year

Education: ☐ Non-High School ☐ High School ☐ GED ☐ Some College
☐ College

Social Security No: _____ - _____ - _____

Veteran Status: ☐ Vietnam Veteran ☐ Non-Vietnam Veteran ☐ Other Veteran

Wage Rate: _____

Driver's License No: _____ Exp. Date: _____ State: _____

 Race: ☐ African American ☐ American Indian ☐ Hispanic ☐ Caucasian ☐ Asian

 Sex: ☐ Male ☐ Female Status: ☐ New Hire ☐ Currently Employed

I hereby certify that I have received a copy of my training program and a representative of the contractor has explained the program to my full understanding. Also, I have not successfully completed a training course leading to journeyman level status in this classification or ever been employed as a journeyman in this classification.

Trainee Signature: _____ Date: _____

I hereby certify that I have presented this employee with a copy of his/her training program and have explained the program to his/her full understanding. To the best of my knowledge this employee has not successfully completed a training program leading to journeyman level status in this classification or ever been employed as a journeyman in this classification.

Contractor Representative Signature: _____

Title: _____ Date: _____

RETAIN ORIGINAL AND MAIL COPY TO:
 North Carolina Department of Transportation
 On-The-Job Training Program
 1511 Mail Service Center
 Raleigh, NC 27699-1511

 OJT USE – Training program qualifies for DOL Program ☐ Yes ☐ No



PLEASE PRINT OR TYPE

Trainee Status: ☐ Active ☐ Inactive - If inactive, please explain in comment section below.

Job classification – required training hours		
Previously earned hours brought forward		
Hours earned this report		
Total hours earned		
		% completion

Observations and/or comments:

Anticipated Graduation Date:

Month	Year

 Is this the final report: ☐ Yes ☐ No

***If this is the Final Report: attach a copy of a completed company certificate with a copy of the completion form**

Signature of person responsible for monitoring training performance for this trainee:

Signature: _____ Title: _____ Date: _____

RETAIN ORIGINAL AND MAIL COPY TO:
North Carolina Department of Transportation
On-The-Job Training Program
1511 Mail Service Center
Raleigh, NC 27699-1511



ON-THE-JOB TRAINING PROGRAM TRAINEE COMPLETION FORM

PLEASE PRINT OR TYPE

Contractor Name: _____

Trainee Name: _____
Last First MiddleAddress: _____
Street/POCity State Zip Code

Training Classification: _____

REASON FOR EXITING OJT PROGRAM

Reason (Check one)

☐ **Voluntary:**Month Day Year☐ Graduation☐ Construction phase completed☐ Death☐ Illness/health problems☐ Military duty☐ Personal☐ Quit to work for another company☐ Relocated☐ Other (Please explain in comment section below)☐ **In-Voluntary:**Month Day Year☐ Fired (Please explain below)☐ Lack of Transportation☐ OtherIf graduating, do you feel this individual has gained sufficient competency in this training classification? YES ☐ NO ☐COMMENTS: _____

_____****Attach a copy of a completed company certificate along with the trainee completion form.**

Signature of Contractor Representative Responsible for Company Training Program

Signature: _____ Title: _____ Date: _____

 RETAIN ORIGINAL AND MAIL COPY TO:
 North Carolina Department of Transportation
 On-the-Job Training Program
 1511 Mail Service Center
 Raleigh, NC 27699-1511

OJT Training Classifications

Asphalt Distributor	3
Asphalt Laboratory Technician	4
Asphalt Paving Machine/Screed Operator	5
Asphalt Plant Operator	6
Asphalt Roadway Technician	7
Assistant Project Manager	8
Backhoe Operator	9
Bridge Carpenter	10
Bridge Worker	11
Bulldozer Operator	12
Bulldozer (Utility)	13
Carpenter	14
Concrete Finisher	15
Concrete Paving Machine Operator	16
Concrete Plant Operator	17
Concrete Plant Operator (helper)	18
Concrete Technician	19
Construction Field Office Assistant	20
Construction Office Manager	21
Crane Operator (1 yard and under)	23
Crane Operator (Over 1 yard)	24
Drill Operator/Air-Track Drill Operator	25
Estimator-Project Manager	26
Excavator Operator (Trackhoe Operator)	28
Foreman – (Bridge)	29
Foreman (Highway Construction)	30
Foreman (Grading)	31
Foreman (Pipe)	32
Front end Loader Operator	34
Fuel, Greaser & Lubricant Service Truck Driver	35
Grade Checker	36
Instrument Engineer	37
Ironworker, Reinforcing	38
Ironworker, Structural	39
Lab Technician (nuclear gauge Technician)	40
Loader Operator	41
Luteman	42
Mason (structural)	43
Mechanic	44
Mechanic Helper	46
Motor Grader Operator (Fine Grade)	48
Motor Grader Operator (Rough Grade)	49
Office Engineer	50
Oiler/Greaser/Firer	51

Pile Hammer Operator	52
Pipelayer (Sanitary/Storm/Water)	53
Rodperson	54
Rodperson GPS Operator.....	55
Roller Operator.....	57
Roller Operator (Finish w/Density Duties).....	58
Roller Operator A (Asphalt, Bituminous Materials)	59
Roller Operator B (Earthwork, Up to Subgrade)	60
Scraper	61
Sign Erector.....	62
Superintendent (Grading).....	63
Traffic Control Specialist.....	64
Truck Driver (Multi-Rear Axle).....	65
Truck Driver (Single-Rear Axle)	66
Truss Pile Hammer Operator (Specialized)	67
Truss Operator (Specialized).....	68
Welder.....	69
Welder/Steel Fabricator	70

Asphalt Distributor

Drives asphalt distributor. Sets spray bar on manual, automatic, or semi-automatic distributors for applying liquid asphalt. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	35 HRS.
C. Starting and manipulating valves and levers to distribute material and move equipment.	30 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Regulates valves and levers to distribute oil or bituminous liquid for highway resurfacing; and	120 HRS.
C. Operation of equipment.	805 HRS.
TOTAL	1040 HRS.

Asphalt Laboratory Technician (Level 1)

Is familiar with asphalt controls, operation, and repairs. Pulls samples of asphalt for testing. Capable of testing asphalt mixtures for process control, prepare paper work and submit to proper agencies. Attend introduction to asphalt class and level 1 tech class presented by N.C. Department of Transportation personnel and pass the written test on both. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1015 HRS.

I. ORIENTATION AND OBSERVATION

- | | |
|--|----------|
| A. Safety procedures; | 20 HRS. |
| B. Observation of plant controls and operations; | 40 HRS. |
| C. Starting and manipulating levers for moving
Equipment and attachments; and | 15 HRS. |
| E. Care and maintenance of equipment. | 100 HRS. |

II. ACTUAL SAMPLE PROCESSING

- | | |
|--|----------|
| A. Assist in taking samples, processing samples of
different types of asphalt mix and processing
paper work. | 800 HRS. |
|--|----------|

III. REQUIREMENTS

- | | |
|---|---------|
| A. Attend introduction to asphalt class and pass
written test; and | 10 HRS. |
| B. Attend level 1 technician class and pass written
test for certification by NCDOT. | 30 HRS. |

TOTAL	1015 HRS.
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Asphalt Paving Machine/Screed Operator

Manipulates hand or foot levers to control movement of paving machine which spreads and levels asphaltic concrete; regulates height and width of screed. Observes distribution of paving material along screed and controls direction of screed to eliminate voids at curbs and joints. Regulates temperature of asphalt; sets and maintains electronic controls for longitudinal and transverse grades. Regulates system to allow fully-automatic paving; familiar with various manufactures' paving equipment. Performs routine fueling, lubrication and adjustment as needed. Performs other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures; and	20 HRS.
B. Observe machine in operation and become familiar with various manufactures' equipment.	40 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	20 HRS.
B. Routine fueling, lubrication, and servicing.	145 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety procedures;	10 HRS.
B. Screed regulation indoctrination and operation; and	120 HRS.
C. On-The-Job operation.	685 HRS.
TOTAL	1040 HRS.

Asphalt Plant Operator

Operates asphalt plant controls to weigh and deliver specified quantities of asphalt cement to dryer for heating, and to mixer for mixing and dumping into trucks. Maintains proper heat in dryer by adjusting thermostatic controls and maintains proper flow of materials. Assists in maintenance and repair of plant equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	10 HRS.
B. Observation of controls in operation; and	40 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	40 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures;	10 HRS.
B. Routine fueling, lubrication, and servicing; and	160 HRS.
C. Assists in maintenance and repair of plant equipment.	200 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	10 HRS.
B. Operation of plant.	570 HRS.
TOTAL	1040 HRS.

Asphalt Roadway Technician

Is familiar with roadway operations, equipment inspections and calibrations. Capable of performing the necessary calculations (i.e. rate of spread, tons required, and test sections for density). Prepare paper work and submit to proper agencies. Attend introduction to asphalt class and QMS Roadway class presented by NCDOT and pass the written test on both. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION

A. Safety Procedures;	20 HRS.
B. Ethical Policy;	20 HRS.
C. Observations of paving operations;	40 HRS.
D. Equipment and attachments; and	20 HRS.
E. Care and maintenance of equipment.	100 HRS.

II. ACTUAL INSPECTION AND DENSITY TESTING

A. Assist in visual inspections (preparation of existing roadway for overlay, equipment, mat texture and temperature) (establish a roller pattern to achieve required density, calculate the amount of test sections, and conduct the density testing for such).	800 HRS.
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III. REQUIREMENTS

A. Attend introduction to asphalt class and pass written test; and	10 HRS.
B. Attend NCDOT QMS Roadway class and pass written test.	30 HRS.

TOTAL: **1040 HRS.**

Assistant Project Manager

Assists in the supervision and coordination of the activities of subcontractors and workers of a given project. Both produces and studies production schedules, analyzes and evaluates costs, maintains and requires a safe working environment and helps in the overall management of a given project as to insure it's profitability and quality.

Training Outline

Approximate Training Time: 52 WKS OR 2080 HOURS

I. ADMINISTRATION	280 HRS.
Interpreting company policy to subcontractors and workers, enforcing safety regulations, producing and maintaining production records, coordinating work schedules of subcontractors and company personnel, recruiting and inspection of materials.	
II. PRODUCTION	1500 HRS.
Receives instructions and specifications from Project Manager and transmits it to subcontractors and company personnel. Interprets blueprints, specifications and job orders. Assists Project Manager in solving job-site problems. Regularly performs all tasks assigned to him/her.	
III. PERSONNEL	300 HRS.
Supervises project in the absence of Project Manager, recommends personnel actions, such as promotions, transfers, discharges, and disciplinary action. Trains and orients new employees and/or trainees.	
TOTAL:	2080 HRS.

Suggested Related Training

Red Cross First Aid Certification, Industry Safety Publications, Blueprint Reading, Industrial Relations, Personnel Management, Contracting Laws, EEO, etc.

The trainee shall be given instruction and training in all branches of the occupation listed in the Training Outline as necessary to become skilled in the occupation. The work experience need not be in the precise order as listed, nor do the scheduled hours of any operation production schedule.

Backhoe Operator

Operates backhoe, such as on the rear of utility tractor and on other equipment, for the purpose of digging and excavating. May oil, grease and make normal operating adjustment to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation of machine and operation; and	20 HRS.
C. Starting, manipulating levers for moving equipment and attachments.	20 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	70 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Trenching operations;	275 HRS.
C. Excavation for footing, structures, etc.; and	280 HRS.
D. Special application and functions.	40 HRS.
TOTAL	720 HRS.

Bridge Carpenter

Lays out work plans or sketch. Builds wooden structures; such as concrete form, falsework, pouring, chute, scaffold, etc. Builds in place to line and grade or prefabricates in units to be erected later, forms for bridge, drainage structure, wall, etc. May perform other related duties.

Training Outline

Approximate Training Time: 52 WKS OR 2080 HRS.

I. ORIENTATION AND SAFE USE OF TOOLS OF THE TRADE

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|-------------------------------------|----------|
| A. Safety Procedures; | 120 HRS. |
| B. Use of Power and Hand Tools; and | 160 HRS. |
| C. Materials Section. | 40 HRS. |

II. APPLIED TECHNIQUES OF BRIDGE CONSTRUCTION CARPENTRY

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|--|----------|
| A. Safety Procedures; | 80 HRS. |
| B. Pier, pile and cap formwork; | 520 HRS. |
| C. Decking formwork; | 520 HRS. |
| D. Parapet and hand railing formwork; | 80 HRS. |
| E. Endwall formwork; | 80 HRS. |
| F. Reading and Application for Blueprint or
Construction Plans; | 60 HRS. |
| G. Basic Form Design Familiarity; and | 20 HRS. |
| H. Stripping and Salvage of Forms for Reuse. | 400 HRS. |

TOTAL	2080 HRS.
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Bridge Worker

Builds formwork, false work, pouring of concrete, erects scaffolding, installation of reinforcing steel, installation of anchor bolts, the erection of support members and bridge superstructure construction, and construction of bridge approaches.

Training Outline

Approximate Training Time: 22 WKS OR 880 HRS.

I. ORIENTATION AND OBSERVATION

A. Bridge construction safety;	20 Hrs.
B. Power and hand tools; and	20 Hrs.
C. Observation of operations.	20 Hrs.

II. APPLIED TECHNIQUES OF BRIDGE CONSTRUCTION

A. Construction of concrete substructures including basic formwork, pouring of concrete pour preparations, stripping of forms, and salvage for reuse and cleaning;	280 Hrs.
B. Installation of reinforcing steel;	100 Hrs.
C. Construction of bridge superstructure including decking, overhangs, parapets, approach slabs, pouring and finishing of concrete;	200 Hrs.
D. Rigging and Erection including installation of bridge beams and all precast concrete items; and	120 Hrs.
E. Construction of Bridge Approaches including power tool operations such as jack hammers, vibrators, tampers, pavement breaker and chainsaws. Also develop a basic understanding of highway grading.	120 Hrs.

TOTAL	880 HRS.
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Bulldozer Operator

Operates tractor with blade attached across front to excavate, level and distribute earth and to push trees and rocks. Fastens attachments to tractor. Connects hydraulic hoses, belts, mechanical linkage or power takeoff shaft to tractor to provide power to raise, lower or tilt attachment. Operates controls to manipulate tool bars, carriers, and disks. Operates controls to maneuver tractor and raise, lower and tilt attachments to clear right-of-way. Listen for stalling action of engine to estimate depth of cut. Operates bulldozer in successive passes to raise or lower terrain to specified grade following markings on grade stakes or hand signals. May service and make normal operating adjustments to equipment.

Training Outline

Approximate Training Time: 21 WKS OR 840 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	35 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	30 HRS.
II ENVIRONMENTAL CONSIDERATIONS	10 HRS.
III SAFETY ASSOCIATED WITH THIS OPERATION	25 HRS.
IV. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
V. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	10 HRS.
B. Movement and stockpiling of material;	160 HRS.
C. Pushing and rough grading;	135 HRS.
D. Clearing and grubbing;	135 HRS.
E. Finish grading; and	185 HRS.
F. Special application.	70 HRS.
TOTAL	840 HRS.

Bulldozer (Utility)

Operates rubber tired or crawler type bulldozer performing work not requiring skill of regular bulldozer operator. Performs work such as, but not limited to, moving materials in stockpile, rough work on grade, pusher for loading scrapers and earthmovers, etc. Operates tractor with other attachments such as, but not limited to, clearing rake, ripper, stumper, push block, etc. May oil, grease, service and make normal operating adjustment to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	35 HRS.
C. Starting, manipulating levers for moving equipment and attachments.	30 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Movement and stockpiling of material;	150 HRS.
C. Pushing and rough grading;	125 HRS.
D. Clearing and grubbing;	125 HRS.
E. Finish grading; and	175 HRS.
F. Special application.	30 HRS.
TOTAL	720 HRS.

Carpenter

Lays out work plans or sketch. Builds wooden structures; such as concrete form, falsework, pouring, chute, scaffold, etc. Builds in place to line and grade or prefabricates in units to be erected later, forms for bridge, drainage structure, wall, etc. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND SAFE USE OF TOOLS OF THE TRADE	
A. Power and hand tools; and	20 HRS.
B. Materials selection.	20 HRS.
II. APPLIED TECHNIQUES OF HIGHWAY CONSTRUCTION CARPENTRY	
A. Safety procedures;	5 HRS.
B. Pier, pile and cap formwork;	145 HRS.
C. Decking formwork;	150 HRS.
D. Parapet and hand railing formwork;	150 HRS.
E. Endwall formwork; and	150 HRS.
F. Box culverts, inlets and headwall formwork.	150 HRS.
III. BLUEPRINT OR CONSTRUCTION PLANS READING AND APPLICATIONS	50 HRS.
IV. BASIC FORMS DESIGN FAMILIARITY	95 HRS.
A. Safety procedures.	5 HRS.
V. STRIPPING AND SALVAGE OF FORMS FOR REUSE	95 HRS.
A. Safety procedures.	5 HRS.
TOTAL	1040 HRS.

Concrete Finisher

Finishes wet concrete surfaces to grade with hand tools, float, trowel, screed, template and straight edge on all types of concrete work requiring a fine finish. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation of use of straight edges, floats and steel trowels;	25 HRS.
C. Observation of forming a finishing of edges and joints; and	25 HRS.
D. Observation of use of concrete finishing machine.	15 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures;	5 HRS.
B. Routine cleaning work area and materials holding materials, tools, and handling canvas belting or burlap strips; and	195 HRS.
C. Routine fueling, lubricating and servicing.	50 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety operating procedures;	10 HRS.
B. Basic operation of tools;	200 HRS.
C. Forming and finishing edges, joints, curbs, gutters, paving and structures; and	310 HRS.
D. Operation of trowels, straight edges, floats or finishing machine.	200 HRS.
TOTAL	1040 HRS.

Concrete Paving Machine Operator

Operates a self-propelled machine which levels fresh concrete to exact grade contour. Starts and operates machine, engages clutch and shifts gears to control machine's movement. Moves levers and adjusts paver to raise or lower attachment that spreads concrete. Observes surface of concrete to point out low spots for workers to add concrete. Operates machine with attachment to successively vibrate, screed, strike-off (remove excess), float surface of concrete, to spray curing compound and cut expansion joints. When cutting expansion joints, places strips of expansion-joint material on machine that automatically inserts material into joints. May oil, grease, or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties. When operating machine to screed and float surface, is designated CONCRETE FINISHING MACHINE OPERATOR. May be designated according to specific function of machine attachment as CURING MACHINE OPERATOR, PAVING SAW OPERATOR, LONGITUDINAL FLOAT OPERATOR, SCREED OPERATOR, SPREADER OPERATOR, STRIKE OFF MACHINE OPERATOR, and other applicable attachments.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	20 HRS.
B. Observe machine in operation; and	30 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	80 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	20 HRS.
B. Routine fueling, lubrication and servicing.	145 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety procedures;	20 HRS.
B. On-The-Job operation; and	685 HRS.
C. Daily cleaning and preventive maintenance.	40 HRS.
TOTAL	1040 HRS.

Concrete Plant Operator

Operates controls to deliver and weigh specified qualities of aggregate Portland cement, fly ash, air intraining agent, and water to mix and dump into trucks. Adjust water and mixing time as permitted by the owner to assure a consistent concrete. Assist in maintenance and repair of all plant equipment. May assist in erecting and dismantling plant. Requires knowledge of process and controls, as well as skill in operating controls to maintain quality concrete at maximum production. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	90 HRS.
A. Safety procedures; and	
B. Observation of controls in operation.	
II. CARE AND MAINTENANCE	370 HRS.
A. Safety procedures;	
B. Routine fueling, lubrication, and servicing; and	
C. Assists in maintenance and repair of plant equipment.	
III. EQUIPMENT OPERATION	580 HRS.
A. Safe operating procedures; and	
B. Operation of plant.	
TOTAL	1040 HRS.

Concrete Plant Operator (Helper)

Operates controls to deliver and weigh specified quantities of aggregate, Portland cement, fly ash, air intraining agent, and water to mix and sump into trucks. Adjust water and mixing time as permitted by the owner to assure a consistent concrete. Assist in maintenance and repair of all plant equipment. May assist in erecting and dismantling plant. Requires knowledge of process and controls, as well as skill in operating controls to maintain quality concrete at maximum production. May perform other related duties.

Training Outline

Approximate training time: 18 WKS OR 720 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	20 HRS.
B. Observation of controls in operation; and	40 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	100 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures;	20 HRS.
B. Routine fueling, lubricating and servicing; and	200 HRS.
C. Assist in maintenance and repair of plant equipment.	340 HRS.
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TOTAL HOURS	720 HRS.

Concrete Technician

Works with mix designs and tests concrete to determine strength. More specifically, takes sand and stone samples for gradation compliance. Runs gradation test, tests air in concrete, takes cores for depth check, tests slump of concrete, makes beams for strength determination. May perform other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I.	ORIENTATION AND OBSERVATION	
	A. Safety procedures;	5 HRS.
	B. Observation of gradation testing of sand and stone; and	40 HRS.
	C. Observation of testing samples of concrete.	50 HRS.
II.	CARE AND MAINTENANCE	
	A. Safety procedures;	5 HRS.
	B. Observation of and maintenance of laboratory equipment; and	15 HRS.
	C. Learning to analyze tests and preparing test results reports.	100 HRS.
III.	ACTUAL OPERATION OF EQUIPMENT	
	A. Safe operating procedures;	5 HRS.
	B. Testing sand and stone samples for gradation;	15 HRS.
	C. Testing samples of concrete for Air in, depth, and slump; and	
	D. Make beams.	285 HRS.
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	TOTAL	520 HRS.

Construction Field Office Assistant

Works with job superintendent in coordinating and monitoring purchases, as well as scheduling their arrival. Work as project timekeeper and orchestrator of the labor force including interviewing, hiring and indoctrination with NCDOT. Performs other related duties.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION	
A. Requirements of purchasing;	20 HRS.
B. Payroll procedures and labor analysis; and	40 HRS.
C. Corporate policy review (personnel).	15 HRS.
II. APPLICATION	
A. Purchasing and scheduling;	120 HRS.
B. Keeping time, monitoring worker's activities;	150 HRS.
C. Prepare documentation for claims processing; and	70 HRS.
D. Overview of all job activities.	120 HRS.
III. OFFICE COORDINATION	
A. Assisting job superintendent; and	40 HRS.
B. Main office and field office coordination.	145 HRS.
TOTAL	720 HRS.

Construction Office Manager

Develop all skills required of Office Manager. To support the Project Manager to include but not limited to: Orientation and Observation of Contractors Safety and Emergency Procedures for filing safety and accident reports. Trainee will be introduced to the Contractors reports which will include EEO reporting requirements. Actual office procedures will include time reports, cost reports, quantity and purchasing reports, materials and supply orders, accounts payable, and petty cash procedures.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION & SAFETY 20 HRS.

- A. Company overview – safety and EEO policy;
- B. Job bulletin board; and
- C. Introduction to job superintendent.

Project Managers expectations of trainee:
Complete explanation of trainee's assignment
with an overview of project.

II. INTRODUCTION & OBSERVATION 160 HRS.

- A. Assist Contractors office and/or Project Manager;
- B. Receive instruction, observe and assist office staff in all aspects of the office needs;
- C. Receive instructions from Office Manager or Project Manager in the following: filing regular corporate reports, cost and revenue rentals, safety and accident reports; and
- D. Receive instruction in maintaining office expenses, payroll, purchasing and material and supply orders, accounts payable, as well as filing accident reports, workmen's compensation and OSHA reports.

Construction Office Manager (Continued)

III. DEMONSTRATION & OFFICE COORDINATION	360 HRS.
A. Demonstrate proficiency in filing contract reports;	
B. Demonstrate knowledge and proficiency of doing cost and revenue reports, as well as, safety and accident reports;	
C. Demonstrate knowledge and proficiency of maintaining payroll;	
D. Demonstrate knowledge and proficiency in account payable, and purchasing materials and supply orders;	
E. Demonstrates ability to maintain petty cash expenses for office;	
F. Demonstrates ability to file workman's compensation and OSHA reports; and	
G. Receive additional comments and instruction from Project Manager and Corporate Manager.	
 IV. APPLICATION & ADMINISTRATION	 500 HRS.
A. To use and apply all training aspects of the Office Manager training.	
 TOTAL	 <hr/> 1040 HRS.

Crane Operator (1 yard and under)

Operates crane, dragline and shovel. Grades to line and grades from reference points. Operates crane to hoist and move materials, raise and lower heavy weights, charge cold feed bins, etc.

Uses dragline, clamshell, gradall, orange peel, and other related attachments. May oil, grease, service and make normal operating adjustment to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	50 HRS.
C. Starting, manipulating levers for moving equipment and attachment.	45 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	295 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Trenching operations (for pipelaying, etc.);	300 HRS.
C. Excavation (for structures, footings, etc.); and	300 HRS.
D. Special applications and functions.	35 HRS.
TOTAL	1040 HRS.

Crane Operator (Over 1 yard)

Operates crane, dragline and shovel. Grades to line and grades from reference points. Operates crane to hoist and move materials, raise and lower heavy weights, charge cold feed bins, etc. Uses dragline, clamshell, gradall, orange peel, and other related attachments. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 52 WKS OR 2080 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	10 HRS.
B. Observation (as a passenger) of machine in operation; and	50 HRS.
C. Starting, manipulating levers for moving equipment and attachments.	50 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	10 HRS.
B. Routine fueling, lubricating, and servicing.	300 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	10 HRS.
B. Excavation of footings and removal of unsuitable materials;	300 HRS.
C. Loading and unloading materials;	350 HRS.
D. Trenching for pipe, etc.;	250 HRS.
E. Hoisting materials;	400 HRS.
F. Placement of beams, pipe, girders, piles, etc.; and	300 HRS.
G. Charge hoppers with materials on asphalt and concrete plants.	50 HRS.
TOTAL	2080 HRS.

Drill Operator/Air-Track Drill Operator

Operates drilling machine, such as wagon drill, air track, well driller, etc., for the purpose of drilling rock, shale, or other material according to specifications. Starts, stops and services portable air compressor. Places block of stone on machine bed and secures it in position for drilling, using electric hoist, wedges and wooden blocks. Measures and marks block for drilling using rule or template and marking pencil. Selects and installs specified bit in drill. Pulls levers and turns wheels to regulate speed of machine, flow of water (coolant) and drilling speed. May drill bits using grindstone. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	50 HRS.
C. Starting, manipulating levers for moving equipment and attachment.	45 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	295 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Trenching operations (for pipelaying, etc.);	300 HRS.
C. Excavation (for structures, footings, etc.); and	300 HRS.
D. Special applications and functions.	35 HRS.
TOTAL	1040 HRS.

Estimator-Project Manager

Individual will be trained in highway construction project work beginning with estimating of bids, coordination and management throughout the duration of a project, and steps for completion of the project. The Estimator-Project manager will learn how to complete any associated project paperwork (daily forms, cost management, billing reports, etc.), assist with management of crew work activities, communicate between the different divisions involved to maintain appropriate coordination so the project runs smoothly, and help address any customer service issues. The trainee will also become familiar with sales and marketing of construction materials as well as general customer relationships.

This person will learn company policies/procedures and job/personnel functions to gain knowledge of all phases of highway construction. Individual will also become familiar with all types of heavy equipment, construction tools, and processes, blueprints and layouts, topographical maps and surveying, scheduling, contractor rules and regulations, and those agencies which govern construction activities.

Training Outline

Approximate training time: 55 WKS OR 2200 HRS.

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| I. FAMILIARIZATION | 150 HRS |
| A. Safe operation procedures and company policies; | |
| B. Review and interpret project plans and specifications; and | |
| C. Record keeping. | |
|
II. JOB KNOWLEDGE |
400 HRS |
| A. Blue print and layout reading, bid book interpretation; | |
| B. Project specifications/contract documents understanding; | |
| C. Material specifications and quality control; | |
| D. Asphalt lay-down procedures; | |
| E. Planning and layout; | |
| F. Excavation, grading, drainages, erosion control; | |
| G. Traffic control and sign packages; and | |
| H. Job site clean-up. | |
|
III. ESTIMATING, MARKETING, AND SALES |
650 HRS |
| A. Product pricing knowledge and cost factors; | |
| B. Estimation formulas and material knowledge; | |
| C. Accurate and timely estimate sheet, contracts, credit approval,
billing reports, etc.; | |
| E. Familiarity with materials cost and bid markers in various areas; | |
| F. Analyzing job quality and profitability results; | |
| G. Value engineering and negotiating change orders; and | |
| H. Customer and public relations. | |

Estimator-Project Manager (continued)

IV. PROJECT MANAGEMENT

1000 HRS.

- A. Coordinate on-site personnel and equipment operation;
- B. Ensure project sites are operating in a safe and efficient manner;
- C. Assist with coordination and supervision of employees and subcontractors, including various disciplines such as earthwork, pipe, grade, paving, traffic;
- D. Accurate and timely preparation of weekly schedules and other operation as needed;
- E. Maintain proper job record such as schedules, personal diary, etc.;
- F. Consistent communication with Coordinator/Construction Manager regarding project status for crew needs;
- G. Assist with preparation of weekly schedules and other operation as needed; and
- H. Customer relations with on-site personnel

TOTAL HOURS

2200 HRS.

Excavator Operator (Trackhoe Operator)

Operates power shovel on which digger is pulled toward machine to excavate. All machines will be over ½ cubic yard. Can be on track or rubber tired and also included under this title will be gradall or wrist-o-twist type equipment. Grades to line and grade. May service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	55 HRS.
A. Safety procedures;	
B. Observation (as a passenger) of machine in operation; and	
C. Starting and manipulation of levels for moving equipment and attachments.	
II. CARE AND MAINTENANCE	100 HRS.
A. Safety procedures; and	
B. Routine fueling, lubricating, and servicing.	
III. EQUIPMENT OPERATION	885 HRS.
A. Safety procedures;	
B. Trenching operations (for pipelaying, etc.);	
C. Excavation (for structures, footings, etc.); and	
D. Special applications and functions.	
TOTAL	1040 HRS.

Foreman - Bridge

Supervises crew to include recruitment, training, and direct supervision. Responsible for coordinating work with regard to inspection, material supply, and equipment required. Keeps personnel records to include payroll time and administer company personnel.

Training Outline

Approximate Training Time: 52 WKS OR 2080 HRS.

I. ORIENTATION AND OBSERVATION	480 HRS.
A. Understanding the function of the job;	
B. Company timekeeping and payroll procedures;	
C. Company EEO policy;	
D. Company safety policy; and	
E. Supervisory instruction.	
II. ADVANCED BLUEPRINT OR CONSTRUCTION PLAN READING	100 HRS.
III. APPLIED TECHNIQUES OF BRIDGE CONSTRUCTION	1500 HRS.
A. Equipment supervision and maintenance;	
B. Care of materials and job-site security;	
C. Operational planning and cost control;	
D. Familiar with standard specs;	
E. Communicate effectively and be able to get along with employees, other personnel, the general public, engineers, inspectors, and the DOT; and	
F. Grades, super elevations, vertical curves, etc.	
TOTAL	2080 HRS.

Foreman (Highway Construction)

Supervises and coordinates the activities of workers under him engaged in one or more occupations. Studies production schedules and estimates man hour requirements for the completion of the job.

Training Outline

Approximate Training Time: 50 WKS OR 2000 HRS.

I. ADMINISTRATION	200 HRS.
Interpreting company policy to workers, enforcing safety regulations, maintaining time and production records, coordinating work schedules with other foremen, recruiting, and inspection of materials.	
II. PRODUCTION	1500 HRS.
Receives instructions and specifications from superintendents and transmits them to other members of the crew. Interprets blueprints, specifications and job orders. Assists workers in solving jobsite problems. Operates power equipment and other machinery as needed. Regularly performs all tasks of workers in the crew.	
III. PERSONNEL	300 HRS.
Supervises crew in absence of superintendent, recommends personnel actions such as promotions, transfers, discharges, and disciplinary action. Trains/orients new employees and/or trainees.	
TOTAL	2000 HRS.

Suggested Related Training

Red Cross First Aid Certification, Industry Safety Publications, Blueprint Reading, Industrial Relations, Personnel Management, Contracting Laws, EEO, etc.

The trainee shall be given instruction and training in all branches of the occupation listed in the Training Outline as necessary to become skilled in the occupation. The work experience need not be in the precise order as listed, nor do the scheduled hours of any operation production schedule.

Foreman (Grading)

Supervises crew to include recruitment, training, and direct supervision. Responsible for coordinating work with regard to inspection, material supply and equipment required. Keeps personnel records to include payroll time and administer company personnel policy.

Training Outline

Approximate Training Time: 52 WKS OR 2080 HRS.

I. ORIENTATION AND OBSERVATION	
A. Understanding the function of the job;	200 HRS.
B. Understanding company time keeping and payroll procedures;	15 HRS.
C. Understanding company EEO policy;	15 HRS.
D. Understanding company safety policy; and	50 HRS.
E. Supervisory instruction.	200 HRS.
II. ADVANCED BLUEPRINT OR CONSTRUCTION PLAN READING	
III. APPLIED TECHNIQUES OF BRIDGE CONSTRUCTION	
A. Equipment supervision and maintenance;	400 HRS.
B. Care of materials and job site security;	200 HRS.
C. Operational planning;	400 HRS.
D. Staking and grading accuracy; and	400 HRS.
E. Able to communicate effectively and to be able to get along with employees, other personnel, the general public, engineers, inspectors, and the DOT.	200 HRS.
TOTAL	2080 HRS.

Foreman (Pipe)

Supervises and coordinates the activities of workers under him engaged in one or more occupations. This includes but not limited to the laying of (sanitary/storm sewer pipelines). Lays glazed or unglazed clay, concrete, steel, or cast iron pipe to form water, sewer, or storm sewer pipelines. Duties require the study of utility and utility conflict plans, setting up laser and other engineering instruments to install pipelines at proposed elevations. Must be able to interpret production schedules and comply with all federal, state, and public utility regulations including Erosion Control Laws and Regulations. Must complete the required trenching and excavation training requirements set forth by The Occupational Safety and Health Administration (OSHA).

Training Outline

Approximate Training Time: 50 WKS or 2000 HRS.

I. ADMINISTRATION	200 HRS.
A. Interprets company policy to workers, enforces safety regulations, maintains time and production records, coordinates work schedules with other foreman, recruiting and inspection of materials.	
II. SAFETY	300 HRS.
A. Attend required trenching and excavation courses to become familiar with regulations of NCDOT and OSHA. Interprets these regulations to personnel along with all other safety rules and regulations. Properly conducts on site safety meetings as well as job inspections and train/instruct heavy equipment safety.	
III. PRODUCTION	1200 HRS.
A. Receives instructions and specifications from superintendents and transmits them to other members of the crew. Interprets blueprints, specifications and job orders. Assists workers in solving jobsite problems. Operates power equipment and other machinery as needed. Regularly performs all tasks of workers in the crew.	
IV. PERSONNEL	300 HRS.
A. Supervises crew in absence if superintendent recommends personnel actions, such as promotions, transfers, discharges, and disciplinary action. Trains/orients new employees and/or trainees.	
TOTAL	2000 HRS.

Foreman (Pipe) (Continued)

Suggested Related Training

Red Cross First Aid Certification, Industry Safety Publications, Blueprint Reading, Industrial Relations, Personnel Management, Controlling Laws, EEO, etc.

Front end Loader Operator

Operates a rubber-tired or other crawler-type tractor with an attached scoop-type bucket on the front end. Starts engines, shifts gears, presses pedals and steers loader. Moves levers to raise and lower bucket and dump contents. Machine is used to load and unload materials, perform excavation, charge batch plants, and load trucks. May oil, grease, or otherwise service and make necessary adjustments to equipment as needed. Performs other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	10 HRS.
B. Observe machine in operation; and	25 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	20 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	10 HRS.
B. Routine fueling, lubrication and servicing.	40 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety procedures;	10 HRS.
B. Loading and unloading materials;	195 HRS.
C. Excavation;	150 HRS.
D. Grading; and	30 HRS.
E. Miscellaneous applications.	30 HRS.
TOTAL	520 HRS.

Fuel, Greaser & Lubricant Service Truck Driver

Drive truck to deliver gasoline, fuel oil, or liquefied petroleum gas to work site. Drives truck into position to load or distribute products. Connects hoses to tank and opens valves. May start pump to fill tanks, read gauges or meters and record quality loaded. May attach ground wire to truck. May lubricate parts and wearing surfaces of equipment as assigned. May operate pressure greasing equipment and clean equipment. May require a commercial driver's license with proper endorsements depending on size/weight of truck or type of material transported. May service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	80 HRS.
A. Overview of Industry;	
B. Company Policies and Procedures;	
C. Instruction and Observation; and	
D. Practical Experience/Applied Techniques.	
II. ENVIRONMENTAL CONSIDERATIONS	25 HRS.
III. SAFETY ASSOCIATED WITH THIS OPERATION	35 HRS.
IV. CARE AND MAINTENANCE	80 HRS.
A. Routine Fueling, Lubrication and Servicing;	
B. Minor Repairs;	
C. Operation Adjustments; and	
D. Cleaning of Equipment/Vehicle and Work Area.	
V. EQUIPMENT OPERATION	820 HRS.
A. Drives Vehicle On/Off Highway;	
B. Loads Fuel and Lubricant onto Truck;	
C. Connects Hoses and Opens Valves;	
D. Starts Pump;	
E. Reads Gauges or Meters and Records Quality Loaded;	
F. Keeps Inventory Records;	
G. Lubricates Parts and Wearing Surfaces;	
H. Changes Filters; and	
I. Makes Normal Operating Adjustments.	
TOTAL	1040 HRS.

Grade Checker

Positions batterboards or pins to indicate direction of cut. Hammers batterboard pins into ground at designated intervals. Test contour of road subgrade to determine uniformity of contour. Shovels dirt from high areas and tamps it into low areas to obtain uniform contour. May signal operator of grading machine to correct discrepancies.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	10 HRS.
B. Observation of placing grade pins and line; and	20 HRS.
C. Observation of setting and checking grade.	20 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Helping set grade pins and lines.	25 HRS.
IV. ACTUAL OPERATION OF SETTING AND CHECKING GRADE	
A. Safe operating procedures;	5 HRS.
B. Setting and driving pins and braces in-place;	100 HRS.
C. Observe and assist in setting grade; and	200 HRS.
D. Check grade and lines before and after.	135 HRS.
TOTAL	520 HRS.

Instrument Engineer

Set up, adjust, and operates surveying instruments. Works from engineering plans to establish lines, points, and grades for construction purposes; keep engineering notes and records of data secured. Computes cross sections of work performed for cost or payment purposes. Has full supervision over and directs Rodperson. Is responsible for accuracy of this field engineering work. May perform other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	10 HRS.
B. Work as Rodperson; and	40 HRS.
C. Observation of instrument engineer.	20 HRS.
II. APPLIED TECHNIQUES OF THE TRADE	
A. Using the rod;	20 HRS.
B. Using the chain;	20 HRS.
C. Using surveying instrument;	30 HRS.
D. Reading plans to establish lines, points, and grades;	30 HRS.
E. Computing cross section; and	30 HRS.
F. Making engineering notes and recording data.	20 HRS.
III. ACTUAL OPERATION	
A. Use surveying instrument to establish lines, points, and grades;	260 HRS.
B. Direct Placement of stakes; and	20 HRS.
C. Supervise Rodperson	20 HRS.
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TOTAL HOURS	520 HRS.

Ironworker, Reinforcing

Positions and secures steel bars to placement of reinforced concrete. Determines number, sizes, shapes and locations of reinforcing rods from plans, specifications, sketches and/or oral instructions. Places and ties reinforcing steel using wire and pliers. Sets rods in place, spaces and secures reinforcing rods. May bend steel rods with hand tools or rodbending machine. May reinforce concrete with wire mesh. May weld reinforcing bars together. May perform other related duties.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	20 HRS.
B. Observation of operation; and	15 HRS.
C. Care and repair of specially-coated bars.	10 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	20 HRS.
B. Care and maintenance of tools and equipment.	30 HRS.
III. ACTUAL OPERATION OF REINFORCING	
A. Construction plan reading and application;	30 HRS.
B. Identification and selection of materials;	30 HRS.
C. Places reinforcing steel and support devices; and	465 HRS.
D. Spaces and secures reinforcing materials.	100 HRS.
TOTAL	720 HRS.

Ironworker, Structural

Performs any combination of the following duties to raise, place and unite girders, columns and other structural steel members to form completed structures or structure frameworks, working as a member of a crew. Sets up hoisting equipment for raising and placing structural steel members. Fastens steel members to cable of hoist using chain, cable or rope. Signals worker operating hoisting equipment to lift and place steel members. Guides member using tab line (rope) or rides on member to guide it into position. Reads plans; rigs, assembles and erects structural members requiring riveting or welding. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	20 HRS.
B. Observe operation; and	35 HRS.
C. Plan reading.	35 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	20 HRS.
B. Care and maintenance of tools and equipment.	70 HRS.
III. ACTUAL OPERATION	
A. Safety procedures;	20 HRS.
B. Rigging structural members requiring riveting or welding;	140 HRS.
C. Assembling structural members requiring riveting or welding; and	300 HRS.
D. Erection of structural members requiring riveting or welding.	400 HRS.
TOTAL	1040 HRS.

Lab Technician (Nuclear Gauge Technician)

Quality Control functions on a daily basis including preliminary training on QMS specifications. Lab testing of aggregate moisture and gradations. Properly trained in use of a straight edge. Use straight edge on projects and have a clear understanding of results. Ability to read printouts in reader box with continued training in QMS specifications. Complete QMS nuclear density certification. Completion of QMS roadway technician by end of training period. Prepare proper documentation per QMS specifications to appropriate QC personnel. Help develop rolling patterns and when problems arise, assist in adjusting patterns to achieve required density. Report density results to paving foreman.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION

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|---|----------|
| A. Safety procedures; | 80 HRS. |
| B. Learns and fully understands the basic functions and requirements of the position; and | 100 HRS. |
| C. Becomes familiar with applicable regulations and/or policies. | 60 HRS. |

II. APPLIED TECHNIQUES

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| A. Develop and maintain ways and means of lab testing, use of straight edge and QMS specs. on a daily basis; | 280 HRS. |
| B. Develop system to help develop rolling patterns, and when problems arise, assist in adjusting patterns to achieve required density; | 200 HRS. |
| C. Become proficient in regards to communication of testing results to all personnel involved; | 100 HRS. |
| D. Become proficient in regards to preparing and submitting proper documentation per QMS specs; and | 100 HRS. |
| E. Stays abreast of any changes which come about during the day and takes necessary steps to make necessary changes. | 120 HRS. |

TOTAL	1040 HRS.
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Loader Operator

Operates rubber-tired or crawler-type tractor with attached scoop-type bucket on front end. Excavates and loads excavated material, loads material from stockpiles, charges batch plants, and loads trucks. May oil, grease, service and make normal operating adjustment to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine and operation; and	20 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	15 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Loading materials;	250 HRS.
C. Excavation; and	150 HRS.
D. Special applications.	35 HRS.
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TOTAL	520 HRS.

Luteman

Distributes asphaltic materials by raking. Matches and finishes freshly made asphalt paving points evenly. Smooths and adjusts surface irregularities. Restores surface finish before compaction. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	30 HRS.
A. Safety procedures; and	
B. Observation of operation.	
II. CARE AND MAINTENANCE	30 HRS.
A. Safety procedures; and	
B. Hand tools.	
III. EQUIPMENT OPERATION	980 HRS.
A. Matches and finishes freshly made asphalt paving joint evenly;	
B. Smooths and adjusts surface irregularities;	
C. Restores surface finish after hand raking; and	
D. Spreads asphalt to proper grade and finishes before compaction.	
TOTAL	1040 HRS.

Mason (structural)

Lays out work from plans. Sets up templates and guidelines. Shapes stone or brick preparatory to setting using chisels, hammers, and other shaping tools. Spreads mortar over stone and foundation with trowel and sets stone in place by hand or with the aid of a crane. Sets stone, brick, concrete, tile or other materials in the construction of manholes, catch basins, drop inlets, sidewalks, retaining walls, and hand finishes these. Hand finishes Portland Cement Concrete structures such as slabs, decks, piers, abutments, etc. Molds expansion joints and edges using edging tools, jointers and straight edges. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	15 HRS.
B. Setting up templates and guidelines;	10 HRS.
C. Use of hand trowels, straight edges, and hand levels; and	60 HRS.
D. Use of materials (including Portland Cement Concrete, brick, tile and concrete block).	40 HRS.
II. ACTUAL OPERATION	
A. Safety procedures;	10 HRS.
B. Excavation;	40 HRS.
C. Manholes, catch basins, drop inlets;	360 HRS.
D. Sidewalks, retaining walls, etc.; and	180 HRS.
E. Miscellaneous structures.	180 HRS.
III. CHECKING AND INSPECTION	
A. Safety procedures;	5 HRS.
B. Blueprint or construction plans reading; and	40 HRS.
C. Conformity with plans and specifications.	100 HRS.
TOTAL	1040 HRS.

Mechanic

Assembles, sets up, adjusts, maintains, repairs and welds equipment. Operates any equipment unit on a temporary basis for operating adjustments. May perform other related duties.

Training Outline

Approximate Training Time: 52 WKS OR 2080 HRS.

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| I. LUBRICATION
Oil, air, and fuel filtration, grease points, and capacities, inspection techniques to detect abnormal conditions. | 40 HRS. |
| II. PAINT AND BODY
Body work and painting procedures. | 40 HRS. |
| III. MACHINE SHOP FAMILIARIZATION
Welding and burning equipment and operations of lathes, saws, shapers, girder and presses. | 160 HRS. |
| IV. INJECTOR-GOVERNOR
The operation and service of fuel injector pumps and nozzles, and engine governors. | 200 HRS. |
| V. WATER-COOLED ENGINE REBUILD
Assist in the complete overhaul and testing of gas and diesel engines. | 120 HRS. |
| VI. TRANSMISSION AND REAR ENDS
Assist in the complete overhaul of the various mechanisms used to transfer engine horsepower to tractive effort. | 240 HRS. |
| VII. AIR COOLED ENGINES
Assist in the complete overhaul of the various air cooled engines and their applications. | 200 HRS. |
| VIII. HEAVY EQUIPMENT PARTS FAMILIARIZATION
The Parts Catalogs, procurement, handling, storage, and cost of heavy equipment parts. | 80 HRS. |

Mechanic (Continued)

IX. STARTERS, GENERATORS, AND VOLTAGE REGULATORS

Assist in the complete overhaul of the various starters, generators, and voltage regulators.

160 HRS.

X. HEAVY EQUIPMENT SHOP

Assist in the repair and overhaul of the various heavy equipment which will include in so far as is practical, crawler and wheel tractors, crawler and portable cranes, booms, front end loaders, rollers, subgrade mixers, motor graders, compactors, pumps, and air compressors-their power plants, transmissions, controls and accessories.

600 HRS.

XI. HEAVY EQUIPMENT FIELD

The role of the field mechanic is to make the repairs necessary in the field and perform preventive maintenance practices necessary to increase service life of the equipment.

240 HRS.

TOTAL

2080 HRS.

Mechanic Helper

Assist in the necessary set-up, adjustments, maintenance, repair and welding of equipment. Operates any equipment unit on a temporary basis for operating adjustments. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. MACHINE SHOP FAMILIARIZATION	80 HRS.
A. Welding and burning equipment; and	
B. Operation of lathes, saws, shapers, girders, and presses.	
II. SPECIFIC SKILLS	
A. Lubrication	20 HRS.
∞ Oil, air, and fuel filtration;	
∞ Grease points and capacities; and	
∞ Inspection techniques to detect abnormal conditions.	
B. Paint and body	20 HRS.
∞ Assist in bodywork and painting procedures.	
C. Injector-Governor	60 HRS.
∞ Operation and service of fuel injector pumps and nozzles and engine governors	
D. Water-cooled engine rebuild	100 HRS.
∞ Assist in the complete overhaul and testing of gas and diesel engines	
E. Transmissions and rear-ends	120 HRS.
∞ Assist in the complete overhaul of the various mechanisms used to transfer engine horsepower to tractive effort	
F. Air-cooled engines	100 HRS.
∞ Assist in the complete overhaul of the various air-cooled engines and their applications	
G. Starters, generators, and voltage regulars	80 HRS.
∞ Assist in the complete overhaul of the various starters, generators, and voltage regulators	

Mechanic Helper (Continued)

III. HEAVY EQUIPMENT PARTS FAMILIARIZATION	40 HRS.
A. The parts catalogs;	
B. Procurement and cost of heavy equipment parts; and	
C. Handling and storage of heavy equipment parts.	
IV. HEAVY EQUIPMENT SERVICING	
A. In the shop	300 HRS.
∞ Assist in the repair and overhaul of the various heavy equipment, including, in so far as is practical, crawler and portable cranes, crawler and wheel tractors, booms, front-end loaders, rollers, subgrade mixers, motor graders, compactors, pumps, and air compressor, their power plants transmissions, controls	
B. ON THE FIELD	120 HRS.
∞ Make the repairs necessary in the field and perform preventive maintenance practices necessary to increase service life of the equipment	
TOTAL	1040 HRS.

Motor Grader Operator (Fine Grade)

Operates self-propelled motor grader and, from stakes and lines, cuts sub-grade and performs other fine grade operations, requiring considerable experience and a high degree of skill. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 39 WKS OR 1560 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	100 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	95 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Scraping and leveling dirt on roadway;	180 HRS.
C. Spreading and mixing materials on roadway;	170 HRS.
D. Shaping and blading subgrades;	150 HRS.
E. Balancing and rough shaping base course materials; and	375 HRS.
F. Fine grading and dressing of shoulders and Slopes.	440 HRS.
TOTAL	1560 HRS.

Motor Grader Operator (Rough Grade)

Operates self-propelled motor grader on rough grade work, such as finishing rough grade on highway including highway shoulders, slopes and ditches. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	100 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	95 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Scraping and leveling dirt on roadway;	180 HRS.
C. Spreading and mixing materials on roadway;	170 HRS.
D. Shaping and blading subgrades;	150 HRS.
E. Balancing and rough shaping base course materials; and	150 HRS.
F. Grading and dressing of shoulders and Slopes.	145 HRS.
TOTAL	1040 HRS.

Office Engineer

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND INTRODUCTION OF COSTING PROGRAM	240 HRS.
A. Understanding and Basic Data Entry; and	
B. Report printing and reviewing.	
II. APPLIED KNOWLEDGE OF COSTING	400 HRS.
A. Time care review and approval;	
B. Schedule of quantities and quantity tracking;	
C. Material Purchasing;	
D. Agency invoicing; and	
E. Subcontractor and supplier payments.	
III. PROJECT BUDGETING	120 HRS.
A. Job cost adjustments;	
B. Budget change orders; and	
C. Contract change orders.	
IV. CONSTRUCTION PLANS AND SPECIFICATIONS	120 HRS.
A. Reading and understanding plans and specifications; and	
B. Quantity take-offs.	
V. SAFETY	160 HRS.
A. Understanding construction and job-site safety;	
B. Coaching and counseling of safety procedures;	
C. Involvement and enforcement of safety procedures; and	
D. Assisting and development of job hazard analysis.	
TOTAL	1040 HRS.

Oiler/Greaser/Firer

A service worker who lubricates the moving parts of wearing surfaces of mechanical equipment, changes oil, greases and filters and refuels equipment. Uses grease gun to force grease into bearings. Packs grease cups by hand. Makes minor adjustments on miscellaneous drive chains and clutches. Keeps machines and equipment clean. Often drives a truck which carries the various fuels, oils and greases.

Hand stokes or fires by gas or oil, a portable or semi-portable steam boiler such as is used on steam shovels, pile drivers, cranes, dredges, hoisting equipment and asphalt plants. May be responsible for safe operation of an oil-fired steam boiler aboard a floating whirly; may be called upon to operate stationary and skid-mounted boilers on land. Must be familiar with operating pressures and adjustments of pipe, valves and fittings. Responsible for minor adjustments, routine maintenance and proper lubrication of equipment. Performs other related duties.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION AND SAFE USE OF TOOLS OF THE TRADE	
A. Lubrication requirements of mechanical Equipment; and	20 HRS.
B. Materials selection.	20 HRS.
II. APPLIED TECHNIQUES OF THE OILER/GREASER/FIRER	
A. Safety procedures;	10 HRS.
B. Equipment characteristics/lubrication points;	140 HRS.
C. Oil changes, filter changes, grease guns, hard packing of grease, greasing bearings;	230 HRS.
D. Minor adjustments to drive chains and clutches; and	150 HRS.
E. Shop and field practices.	50 HRS.
III. EQUIPMENT OPERATION AND OPERATION OF OIL, GREASE AND FUEL TRUCK	
A. Safety procedures	85 HRS.
	15 HRS.
TOTAL	720 HRS.

Pile Hammer Operator

Operates Pile-driving machine or Pile Hammer, with crane or skid-mounted, with leads or jets for driving pile as foundations for piers, bridges, etc. Moves levers to control hoisting equipment used to position leads. Assists other workers in setting up pile hammer leads. May oil, grease or otherwise service and make necessary adjustments to equipment as needed. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	40 HRS.
B. Observe machine in operation; and	145 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	145 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	20 HRS.
B. Routine fueling, lubrication and servicing.	40 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety procedures;	20 HRS.
B. Basic operation of crane or pile-driving rig in hoisting and moving;	225 HRS.
C. Preparation of pile for driving;	100 HRS.
D. Seating of pile hammer on pile in preparation for driving; and	140 HRS.
E. Driving of pile.	165 HRS.
TOTAL	1040 HRS.

Pipelayer (Sanitary/Storm/Water)

Lays glazed or unglazed clay, concrete, steel or cast-iron pipe to form water lines, gas lines, sanitary or storm sewers and drains; lays underground telephone and electrical duct. May smooth bottom of trench to proper elevation by scooping with a shovel; receives pipe lowered from top of trench; inserts spigot end of pipe into bell end of last laid pipe. Adjusts pipe to line and grade, caulks joints with oakum or yarn and seals joints with cement or other sealing compound; may connect threaded or flanged joint pipe, may assemble and place corrugated metal pipe. Must be able to physically set elevations with laser or other engineering equipment. May perform other related duties.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures, MOSHA & OSHA Regulations;	40 HRS.
B. Observe spade operation and laying of pipe;	15 HRS.
C. Study of various forms of pipe and related materials; and	5 HRS.
D. Familiarity with local codes and testing procedures.	70 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	10 HRS.
B. Ditch preparation, handles materials and tools.	15 HRS.
III. ACTUAL HANDLING OF PIPE AND SPADE	
A. Ditch grading with compressed-air-driven or hand spade;	50 HRS.
B. Handle materials, assist in lowering pipe;	50 HRS.
C. Work with pipelayer in laying all types of pipe and duct, adjust pipe to elevation, insert spigot end of pipe into bell end of last laid pipe; and	365 HRS.
D. Performing testing procedures.	100 HRS.
TOTAL	720 HRS.

Rodperson

Uses surveyor's chain to measure distances as directed by Instrument Engineer. May mark reference points. May hold engineering rod at points designed by Instrument Engineer to establish or obtain elevation of those points. May set stakes. May perform other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures; and	10 HRS.
B. Observation of rodperson.	30 HRS.
II. APPLIED TECHNIQUES OF THE TRADE	
A. Use of the chain;	60 HRS.
B. Use of the rod; and	70 HRS.
C. Placing stakes.	50 HRS.
III. ACTUAL OPERATIONS	
A. Measuring distances with chain; and	150 HRS.
B. Establishing elevation with rod.	150 HRS.
TOTAL	520 HRS.

Rodperson GPS Operator

Uses surveyor's chain to measure distance as directed by instrument Engineer. Mark reference points, hold engineering rod at points designed by Instrument Engineer to establish or obtain elevation of those points. Set stakes. Sets up, adjusts, and operates surveying instruments. Works from engineering plans to establish lines, points and grades for construction purposes; keeps engineering notes and records of data secured. Computes cross sections of work performed for cost or payment purposes. Responsible for accuracy of this field engineering work. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

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|---|-----------------|
| I. ORIENTATION | 2 HRS. |
| A. Safety procedures; and | 3 HRS. |
| B. Observation of rodperson. | 20 HRS. |
| II. APPLIED TECHNIQUES OF THE TRADE OF RODPERSON | |
| A. Use of the chain; | 45 HRS. |
| B. Use of the rod; and | 45 HRS. |
| C. Placing stakes. | 45 HRS. |
| III. GPS OPERATOR'S INSTRUCTION | 200 HRS. |
| A. Toolbox safety procedures; | |
| B. Observe proper operation of the GPS equipment; | |
| C. Receive instruction on basic function and preparation of daily functions; and | |
| D. Learn proper method of transporting GPS equipment (sequence of usage for various procedures). | |
| IV. GPS OPERATION AND SETUP | 200 HRS. |
| A. Toolbox safety meeting; | |
| B. Establish standard procedure and scheduling for preventative maintenance on GPS equipment; | |
| C. Develop plan for corrective maintenance; | |
| D. Sets and assembles GPS for use on the project; and | |
| E. Receives instruction on company policy and observes methods to receive and store GPS for use on the project. | |
| V. ACTUAL RODPERSON OPERATIONS | |
| A. Measuring distances with chain; and | 140 HRS. |
| B. Establishing elevation with rod. | 140 HRS. |

Rodperson GPS Operator (continued)

VI.	ACTUAL GPS OPERATOR APPLICATION	200 HRS.
	A. Toolbox safety meeting;	
	B. Demonstrate, under supervision, ability to receive and store GPS equipment needed for job;	
	C. Plans, arranges and transports GPS equipment to project site;	
	D. Assists in the planning and implementation of preventative and corrective maintenance of equipment; and	
	E. Work with tools of trade to maintain equipment in good working order	

	TOTAL	1040 HRS.

Roller Operator

Operates self-propelled steel-wheeled, rubber-tired, sheepsfoot, vibratory, segmented, or other type roller to compact earth, subgrade, subbase, shoulder materials, or stone cover on surface treatment. May also operate rubber-tired roller on asphalt concrete. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures; and	5 HRS.
B. Observation (as a passenger) of machine in operation.	35 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Rolls base course to desired compaction; and	455 HRS.
C. Rolls asphalt surfaces to desired compaction and smoothness and assures proper sealing of joints.	500 HRS.
TOTAL	1040 HRS.

Roller Operator (Finish w/Density Duties)

Operates tandem roller, static or vibrator for finishing of bases and asphalt surfaces. May also operate rubber tied roller on bases and asphalt surfaces, including final rolling in asphalt concrete. May oil, grease, service and make normal operating adjustments to equipment. Operate Electric Density on all asphalt surfaces following roller patterns to establish and/or confirm proper compaction effort for all rollers. May perform other related duties.

Training Outline

Approximate Training Time: 29WKS OR 1160 HRS.

I. ORIENTATION AND OSEERVATION	
A. Safety Procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation (Static, Pneumatic, Vibratory);	35 HRS.
C. Review Operating Manual (Electric Density Gauge); and	8 HRS.
D. Observation of actual use of Electric Density Gauge.	24 HRS.
II. CARE AND MAINTENANCE	
A. Safety Procedures;	5 HRS.
B. Routine fueling, lubrication and servicing;	35 HRS.
C. Proper storage, handling, cleaning of Electric Density Gauge; and	8 HRS.
D. Understand all adjustments on all rollers (tire pressure, frequency, amplitude, water system, scrapers, fuse locations).	40 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety Procedures;	5 HRS.
B. Rolls base course to desired compaction;	455 HRS.
C. Rolls asphalt surfaces to desired compaction and smoothness and assures proper sealing of joints; and	500 HRS.
D. Determination of density in breakdown, intermittent and Finish phases, with and with out assistance from QC tech.	<u>40 HRS.</u>
TOTAL:	1160 HRS.

Roller Operator A (Asphalt, Bituminous Materials)

Operates self-propelled steel-wheeled, rubber-tired, sheepsfoot, vibrator, segmented, or other type roller to compact binder course, base course, surface course, shoulder materials, or stone cover on surface treatment. May also operate rubber-tired roller on base and asphalt surfaces, including final rolling on asphalt concrete. Drives machine in successive overlapping passes over surfaces to be compacted. Determines speed and direction of machine based on knowledge of compressibility of material under changing temperatures, so that ridges are not formed by excessive pressure. May oil, grease or otherwise service and make necessary adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures; and	10 HRS.
B. Observe machine in operation.	30 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	10 HRS.
B. Routine fueling, lubrication and servicing.	30 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety procedures;	10 HRS.
B. Starting and manipulating levers for moving equipment;	30 HRS.
C. Rolls asphalt base course to desired compaction; and	450 HRS.
D. Rolls asphalt surfaces to desired compaction and smoothness and assures proper sealing of joints.	470 HRS.
TOTAL	1040 HRS.

Roller Operator B (Earthwork, Up to Subgrade)

Operates self-propelled steel-wheeled, rubber-tired, sheepsfoot, vibrator, segmented, or other type roller to compact earth, subgrade, sub-base, shoulder materials, or stone cover on surface treatment. May also operate rubber-tired roller on base and asphalt surfaces, including final rolling on asphalt concrete. Drives machine in successive overlapping passes over surfaces to be compacted. Determines speed and direction of machine based on knowledge of compressibility of material under changing temperatures, so that ridges are not formed by excessive pressure. May oil, grease or otherwise service and make necessary adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures; and	10 HRS.
B. Observe machine in operation.	30 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	30 HRS.
B. Routine fueling, lubrication and servicing.	10 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safety procedures;	10 HRS.
B. Starting and manipulating levers for moving equipment and attachments, including blades;	30 HRS.
C. Rolls embankments to desired compaction; and	450 HRS.
D. Rolls subgrade to desired compaction and Smoothness.	470 HRS.
TOTAL	1040 HRS.

Scraper

Operates self-propelled rubber-tired or tractor-drawn unit known as scraper, pan, etc., to excavate, transport and deposit materials moved in normal grading operations. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of machine in operation; and	20 HRS.
C. Starting and manipulating levers for moving equipment and attachments.	15 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Loading;	150 HRS.
C. Spreading material;	150 HRS.
D. Rough roadway grading; and	70 HRS.
E. Compaction of embankment.	65 HRS.
TOTAL	520 HRS.

Sign Erector

Erects reassembled signs according to plans, sketches and blueprints. Measures location for sign and marks points where holes for expansion shields are to be drilled. Drills holes using star drill. Makes layout for erection of signs, cuts ties and sets reinforcing steel. Sets forms for concrete, pours concrete, sets anchor bolts, erects wooden or metal structures, places clamps, brackets or other required hardware on structures. May use welding equipment for installation. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND SAFE USE OF TOOLS OF THE TRADE	
A. Power and hand tools;	20 HRS.
B. Special fittings and hardware; and	10 HRS.
C. Specifications or design for concrete mixer.	20 HRS.
II. APPLIED TECHNIQUES OF SIGN ERECTION	
A. Preparation of layout for signs;	30 HRS.
B. Cuts, ties, and sets reinforcing steel for footings;	25 HRS.
C. Sets forms, places concrete, sets anchor bolts;	300 HRS.
D. Erects wooden or metal structures;	250 HRS.
E. Places clamps, brackets or other required hardware on structures; and	240 HRS.
F. Safety procedures.	10 HRS.
III. BLUEPRINT OR CONSTRUCTION PLAN READING AND FAMILIARITY WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES	
	50 HRS.
IV. BASIC DESIGN FAMILIARITY	
A. Safety procedures.	10 HRS.
V. STRIPPING AND SALVAGING OF FORMS FOR RE-USE	
	65 HRS.
A. Safety procedures.	10 HRS.
TOTAL	1040 HRS.

Superintendent (Grading)

Supervises and coordinates the activities of highway grading crew. Studies production schedules and estimated man-hour requirements for the completion of the job.

Training Outline

Approximate Training Time: 50 WKS OR 2000 HRS.

I. ADMINISTRATION	200 HRS.
<ul style="list-style-type: none"> A. Interpreting company policy to workers; B. Enforcing safety regulations; C. Maintaining time and production records; D. Coordinating work schedules with other superintendents; E. Recruiting; and F. Inspection of materials. 	
II. PRODUCTION	1500 HRS.
<ul style="list-style-type: none"> A. Transmits instructions and specifications to the foreman and other members of the crew; B. Interprets construction drawings and specifications and applies them in building the project; C. Assist workers in solving job-site problems; and D. Coordinates with project manager and general superintendent (grading) on short term schedule of work to be performed. 	
III. PERSONNEL	300 HRS.
<ul style="list-style-type: none"> A. Supervises crew; B. Recommends personnel actions such as promotions, transfers, discharges, and disciplinary action; and C. Trains/orients new employees and/or trainees. 	
TOTAL	2000 HRS.

Suggested Related Training

Red Cross First Aid Certification, Industry Safety Publications, Blue-Print Reading, Industrial Relations, Personnel Management, Contracting Laws, EEO, etc.

Traffic Control Specialist

Communicates and maintains suitable liaison with Project Superintendent, Project Manager and Project Engineer. Develops and maintains ways and means of controlling traffic on a daily basis. Ensures that adequate supplies are available to meet required needs. Responsible for proper placement, erection and removal of traffic control materials. Ensures that flagpersons are properly trained and placed effectively.

Training Outline

Approximate Training Time: 18 WKS OR 720 HRS.

I. ORIENTATION AND OBSERVATION

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| A. Safety procedures; | 10 HRS. |
| B. Learns and fully understands the basic functions and requirements of the position; and | 20 HRS. |
| C. Becomes familiar with applicable regulations and/or policies. | 20 HRS. |

II. APPLIED TECHNIQUES

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| A. Development and maintenance of ways and means of controlling traffic on a daily basis; | 150 HRS. |
| B. Sees that adequate supplies are on hand to meet required needs; | 20 HRS. |
| C. Erects and places required traffic control materials on a daily basis. Also responsible for removal of such material at end of work day; and | 300 HRS. |
| D. Stays abreast of any changes which come about during the day and takes necessary steps to effect suitable control procedures. | 200 HRS. |

TOTAL	720 HRS.
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Truck Driver (Multi-Rear Axle)

Drives multi-rear axle truck for transporting construction material. May have various kinds of beds attached, such as dump, flatbed, water tank, etc. Includes water wagon, service truck, hoist truck, etc. May pull semi-trailer or trailer. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	10 HRS.
B. Observation (as a passenger) of vehicle in operation; and	50 HRS.
C. Starting and manipulating vehicle.	40 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	10 HRS.
B. Routine fueling, lubricating, and servicing.	340 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures; and	10 HRS.
B. Loading and unloading materials and operation of vehicle.	580 HRS.
TOTAL	1040 HRS.

Truck Driver (Single-Rear Axle)

Drives single-rear axle truck for transporting construction material. May have various kinds of beds attached, such as: dump, flat bed, water tank, etc. Includes pickup, water wagon, service truck, hoist truck, etc. May pull semi-trailer or trailer. May oil, grease, service and make normal operating adjustments to equipment. May perform other related duties.

Training Outline

Approximate Training Time: 13 WKS OR 520 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation (as a passenger) of vehicle in operation; and	20 HRS.
C. Starting and manipulating vehicle.	15 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine fueling, lubricating, and servicing.	35 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures; and	5 HRS.
B. Loading and unloading material and operation of vehicle.	435 HRS.
TOTAL	520 HRS.

Truss Pile Hammer Operator (Specialized)

Truss pile driving foreman for Launching Gantry # 1. The pile driving foreman is responsible for placement and driving of 30" precast concrete pile. During driving operations the foreman stays in constant communication with the truss operator, surveyor, and QC inspector to insure all piles are driven in the right location and meet bearing specifications. The pile driving foreman follows detailed procedures before each movement of LG1's lead system to insure safety of all workers involved.

Training Outline

Approximate Training Time: 26 WEEKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Observation and instruction of machine in operation; and	50 HRS.
C. Starting, manipulating levers for moving equipment and attachment.	45 HRS.
II. CARE AND MAINTENANCE	
A. Safety procedures; and	5 HRS.
B. Routine lubricating and servicing of machine.	295 HRS.
III. ACTUAL OPERATION OF EQUIPMENT	
A. Safe operating procedures;	5 HRS.
B. Hammer Lead Operation to place and strike piles; and	600HRS.
C. Special applications and functions.	35HRS.
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TOTAL	1040HRS.

Truss Operator (Specialized)

Truss trolley operator foreman for Launching Gantry # 1, the trolley operator is responsible for the movement and critical lifts of the LG1 system. Activities include positioning 30" concrete pile, setting 45 ton precast cap segments, and placement of 70 ton girders into position for the success of the bridge building operation. The trolley operator stays in constant communication with supervision, spotters, and other foreman to insure safety of all involved with day to day operations.

Training Outline

Approximate Training Time: 26 WEEKS OR 1040 HRS.

I.	ORIENTATION AND OBSERVATION	
	A. Safety procedures;	5 HRS.
	B. Observation and instruction of machine in operation; and	50 HRS.
	C. Starting, manipulating levers for moving equipment and attachment	45 HRS.
II.	CARE AND MAINTENANCE	
	A. Safety procedures; and	5 HRS.
	B. Routine lubricating and servicing of machine.	295 HRS.
III.	ACTUAL OPERATION OF EQUIPMENT	
	A. Safe operating procedures;	5 HRS.
	B. Trolley Operation to place materials into position; and	600HRS.
	C. Special applications and functions.	35HRS.
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	TOTAL	1040HRS.

Welder

Operates both electric welding apparatus and acetylene cutting apparatus. Fuses metal parts together using either arc welding process or oxy-acetylene method. Cuts, lies out, fits and welds sheet metal and other metal or alloyed metal parts to fabricate or repair equipment. May perform other related duties.

Training Outline

Approximate Training Time: 26 WKS OR 1040 HRS.

I. ORIENTATION AND OBSERVATION	
A. Safety procedures;	5 HRS.
B. Welding equipment;	20 HRS.
C. Materials selection; and	20 HRS.
D. Observation of welder.	20 HRS.
II. APPLIED TECHNIQUES OF WELDING	
A. Safety procedures;	5 HRS.
B. Acetylene cutting; and	300 HRS.
C. Electric welding.	300 HRS.
III. ACTUAL WELDING OPERATIONS	
A. Safety procedures;	5 HRS.
B. Cut, layout, fit and weld sheet metal and other metal parts; and	185 HRS.
C. Fabricate and repair equipment.	180 HRS.
TOTAL	1040 HRS.

Welder/Steel Fabricator

Operates both electric welding apparatus and acetylene welding apparatus. Fuses metal parts together using either arc welding process or oxy-acetylene method. Cuts, lays out, fits and welds sheet metal, cast iron, and other metal or alloyed metal parts to fabricate or repair equipment. The job will require skill in performing rebuilds as well as design fabrications that will meet certification quality. The job requires the following motions: climbing, stooping, bending, squatting, lifting, stretching, driving/sitting, pushing, gripping, pulling, twisting, kneeling, standing, reaching and hammering. Must lift varying weights regularly, up to 100 pounds. Uses other hand tools such as wrenches, files, rasps, etc. May be exposed to extremes of hot or cold weather. Overtime is required as needed. Should job require operating company vehicle, employee maybe required to meet Driver Qualification Standards. In some instances, may require following Commercial Drivers' License and necessary endorsements in accordance with 49 CFR 383.91: heavy straight vehicle (Group B).

Job requires skills in certain type of blueprint reading, as well as planning and building from instruction.

Training Outline

Approximate Training Time: 47 WEEKS OR 1880 HRS.

I. ORIENTATION AND OBSERVATION

A. Safety procedures;	15 HRS.
B. Welding equipment;	40 HRS.
C. Material selection; and	40 HRS.
D. Observation of welder.	60 HRS.

II. APPLIED TECHNIQUES OF WELDING

A. Safety procedures;	15 HRS.
B. Acetylene cutting; and	350 HRS.
C. Electric welding.	350 HRS.

III. ACTUAL WELDING OPERATIONS

A. Safety procedures;	15 HRS.
B. Cut, layout and weld metal and other metal parts;	400 HRS.
C. Fabricate and repair equipment; and	400 HRS.
D. Design, record keeping, inventory and other miscellaneous items such as forklift, OSHA, and defensive driver training.	195 HRS.

TOTAL	1880 HRS.
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